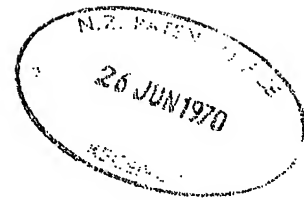


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NEW ZEALAND

PATENTS ACT, 1953

No.: 156,033

Date: 3 April 1969

COMPLETE SPECIFICATION

"Improvements in or relating to chair support means"

I/We, SIDNEY KLEIN and HARRY ARONS both of 136  
Jackson Street, Petone, New Zealand, both British  
Subjects and New Zealand Citizens.

hereby declare the invention for which I / we pray that a patent may  
be granted to me/us, and the method by which it is to be performed,  
to be particularly described in and by the following statement: -

This invention relates to chair support means.

It is desirable to provide a chair support which will allow pivotal movement of the seat of the chair while also allowing easy adjustment of the height of the chair to suit an individual users requirements.

It is therefore an object of the present invention to provide a chair support means which will go a considerable way to meeting the above mentioned desiderata.

Accordingly in one aspect the invention consists in a chair support means comprising a column, a longitudinal groove extending along part of the length of the said column, said groove being tapered to become shallower as it rises up said column when fitted in use, a collar slideably mounted on said column, a threaded aperture through said collar, a threaded control member engagable within said threaded aperture in said collar and arranged so that the end thereof engages in said groove with the inclined base, a housing to receive one end of said column and support said collar, the construction and arrangement being such that upon an operator unscrewing the control member, the column will move through the collar thereby allowing controlled movement between the column and housing.

In a further aspect the invention consists in a chair incorporating a chair support means according to the preceeding paragraph.

One preferred form of the invention will now be described with reference to the accompanying drawings in which:

Figure 1 is an elevation of the operative components of a chair support means according to the present invention showing the column in a raised position relative to the support housing.

Figure 2 is a similar section but with the column in the lowered position.

Figure 3 is a plan view.

In the preferred form of the invention a chair is constructed having a suitable chair base (not illustrated in the drawings) from which is supported a housing 1 which will accomodate a column 2. The column 2 is in turn attached to and supports the chair seat. The arrangement as above described in is common use and is not described or illustrated in detail. The present invention is concerned with operating components which allow for support and adjustment between the column and the housing to allow for height adjustment of the seat.

To this end a longitudinal groove 3 is formed over a length of the column 2 and has a base 4 which is inclined to progressively become shallower from the lower end 5 to the upper end 6. The groove may be machined or otherwise suitably formed and extends over the normal height adjustment range necessary for a chair, for example 4". The groove preferably has a flat base and the depth at the end 5 is approximately  $3/16$ " and the depth at the end 6  $1/16$ " although these figures are by way of illustration only and could be substituted for any desired length or depth ratio provided the inclined base is formed.

Slideably mounted about the column 2 is the collar 7. A threaded aperture 8 is formed through the collar at right angles to the longitudinal axis of the column 2 and a threaded control member 9 is engagable with the threaded aperture so that the end of the treaded control member will engage in the groove 3. The control member 9 preferably has a knob 10 on the end thereof to allow for easy adjustment by a user.

A bearing means provided between the upper end of the housing 1 and the underside of the collar 7. The bearing means preferably comprises a nylon washer 11 having a flat upper face 12 engagable with the under face of the collar 7, and a tapered underface 13 adapted to engage with the outwardly flared upper end 14 of the cylindrical housing 1. The bearing surface is between the underside of the collar and the top of the washer.

A skirt 15 is dependant from the collar for a distance of approximately 2" and conceals the bearing washer 11. A screw 16 engages through the skirt behind the outwardly flared end 14 of the housing thereby ensuring that there is very little movement between the column and the housing when the chair is lifted from the ground by the seat.

A guide 17 is provided at the end of the column 2 and has a diameter only slightly less than the internal diameter of the housing. This guide is also preferably formed from a nylon or other suitable plastics material.

The present invention provides an efficiently swivel support for a chair and also height adjustment means which can be easily and quickly controlled by a user. In order to adjust the height if an operator wishes to lower the seat, for example from a position as illustrated in Figure 1 towards the position illustrated in Figure 2, the user while still seated on the seat unscrews gently the control knob 10. The weight of the column, the seat, and if the user is seated thereupon, the users weight as well, will cause the column to move down through the collar until the wedging action between the fitted control stub 9 and the inclined base 4 of the slot 3 ensures that the chair is properly supported. Because of the construction used in the present invention the seat will not slip from its adjusted height. The user may thus adjust the chair while

seated thereupon until it reaches the appropriate height.

If the chair seat is too low it will be necessary for the user to rise from the seat and lift the column relative to the collar and screw in the control stud 9 until the components are substantially in position as illustrated in Figure 1. The seat height may then be adjusted downwardly as is previously described.

While in the preferred form of the invention the column has been attached to the chair seat, it would be conceivable to devise a construction whereby the column was supported from the chair base and the housing was supported from the chair seat. The principle of the invention would clearly still apply while no preferred embodiment is disclosed herein. Such a construction would be apparent to a person skilled in this field.

1. A chair support means comprising a column, a longitudinal groove extending along part of the length of the said column, said groove being tapered to become shallower as it rises up said column when fitted in use, a collar slideably mounted on said column, a threaded aperture through said collar, a threaded control member engagable within said threaded aperture in said collar and arranged so that the end thereof engages in said groove with the inclined base, a housing to receive one end of said column and support said collar, the construction and arrangement being such that upon an operator unscrewing the control member, the column will move through the collar thereby allowing controlled movement between the column and housing.

2. A chair support means as claimed in Claim 1 wherein said column is adapted in use to support a chair seat and said housing is supported on a chair base so that adjustment of said column relative to the housing by unscrewing the control member will lower the chair seat.

3. A chair support means as claimed in Claim 1 or Claim 2 including a bearing means between the end of the housing and said collar allowing the column <sup>to rotate</sup> relative to the housing.

4. A chair support means as claimed in Claim 3 wherein said bearing means comprises a nylon washer having a flat upper face to engage the under surface of the collar and bevelled undersurface to engage with an outwardly flared upper end of the housing.

5. A chair support means as claimed in Claim 4 wherein said collar has a skirt extending therefrom to conceal the bearing washer.

6. A chair support as claimed in any one of the preceding claims wherein a guide is fitted to the lower end

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of said column having a diameter slightly less than the internal diameter of the housing thereby acting as a stabilizing support point for the chair.

7. A chair support means when constructed arranged and operable substantially as herein described with reference to the accompanying drawings.

8. A chair incorporating a chair support means according to any one of the preceding claims.

DATED THIS 26 DAY OF JUNE 1970  
A. J. PARK & SON  
PER R. J. Korman  
ATTORNEY FOR THE APPLICANT

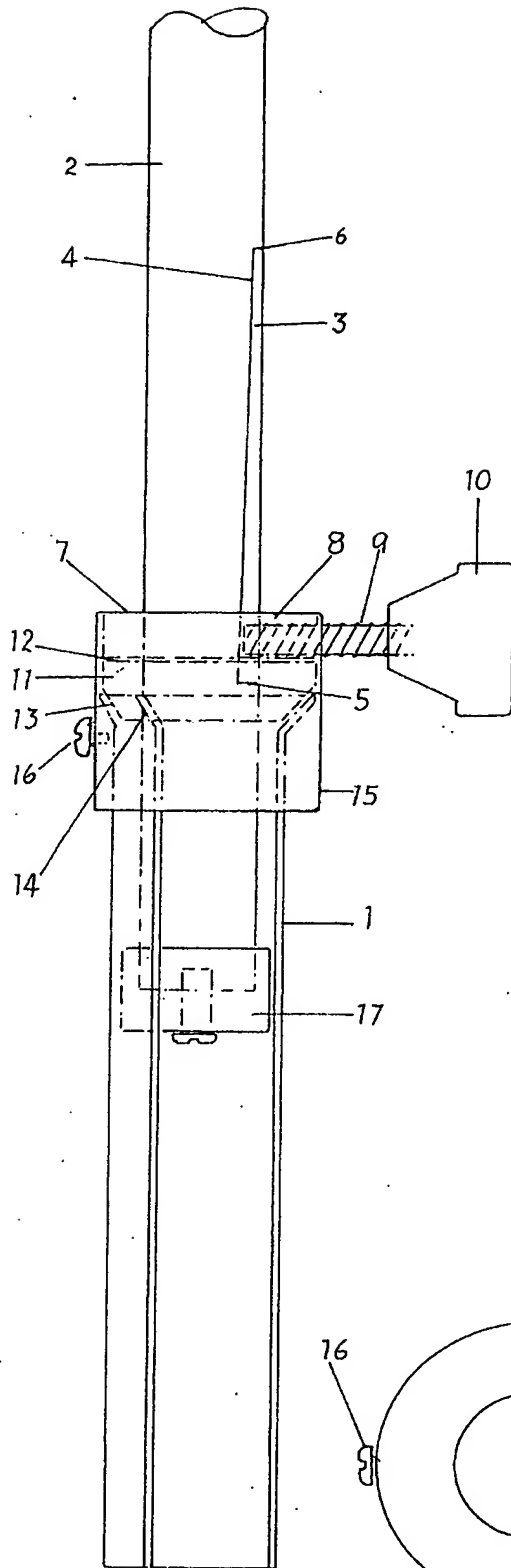


FIG. 1

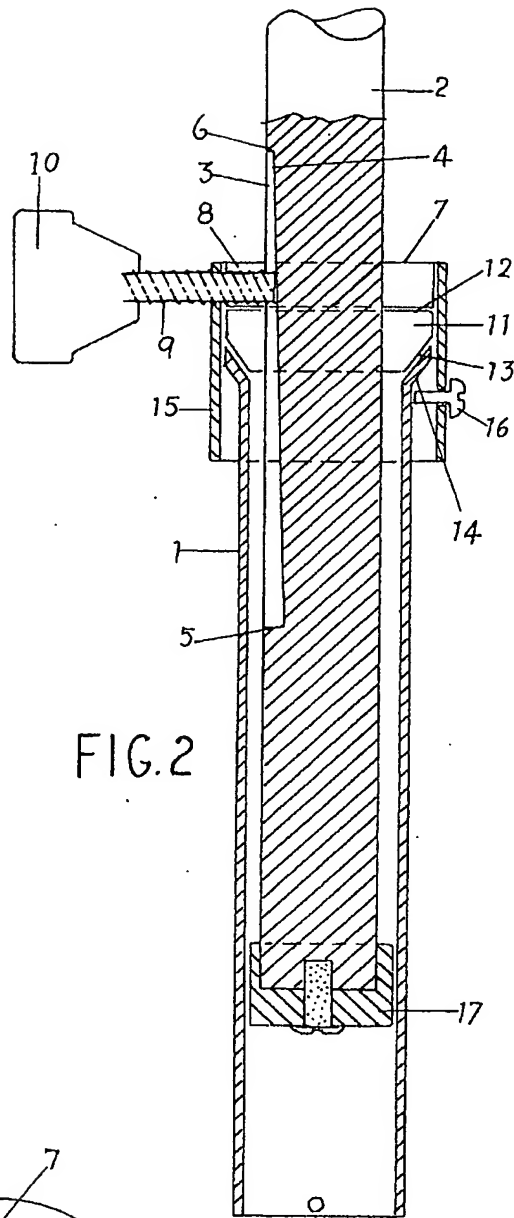


FIG. 2

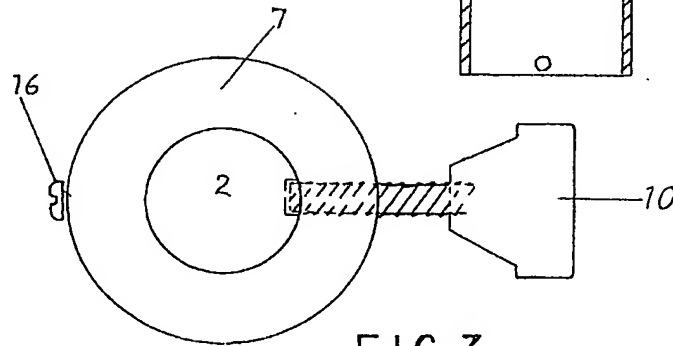


FIG. 3

SIDNEY KLEIN (WILL HARRY AGOU)  
By His/their authorised Agents,  
A. J. FARR & SONS.  
21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100



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